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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,083	10/06/2003	Shunpei Yamazaki	0756-7209	4411

31780 7590 10/18/2005

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EXAMINER
GREEN, PHILLIP

ART UNIT	PAPER NUMBER
2823	

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

4K

Office Action Summary

Application No.	10/678,083	
Applicant(s)	YAMAZAKI ET AL.	
Examiner	Phillip S. Green	
Art Unit	2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 October 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-18,20,21 and 24-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-18,20,21 and 24-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date *10/06/2003*.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicants' election without taverse of Claims 1-9, 19 and 22-23, in the reply filed 10/06/03 is acknowledged.

2. Claims 1-9, 19 and 22-23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/06/2003.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 10/06/03, 12/23/03, 03/03/05, 7/06/05 and 2/22/05 was filed after the mailing date of the application. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Priority

4. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

5. Claims 13-18 and 24-27 are objected to because of the following informalities: One acceptable form of alternative expression, which is commonly referred to as a Markush group, recites members as being "selected from the group consisting of A, B

and C." See Ex parte Markush, 1925 C.D. 126 (Comm'r Pat. 1925). It is improper to use the term "comprising" instead of "consisting of" See *Ex parte Dotter*, 12 USPQ 382 (Bd. App. 1931). Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

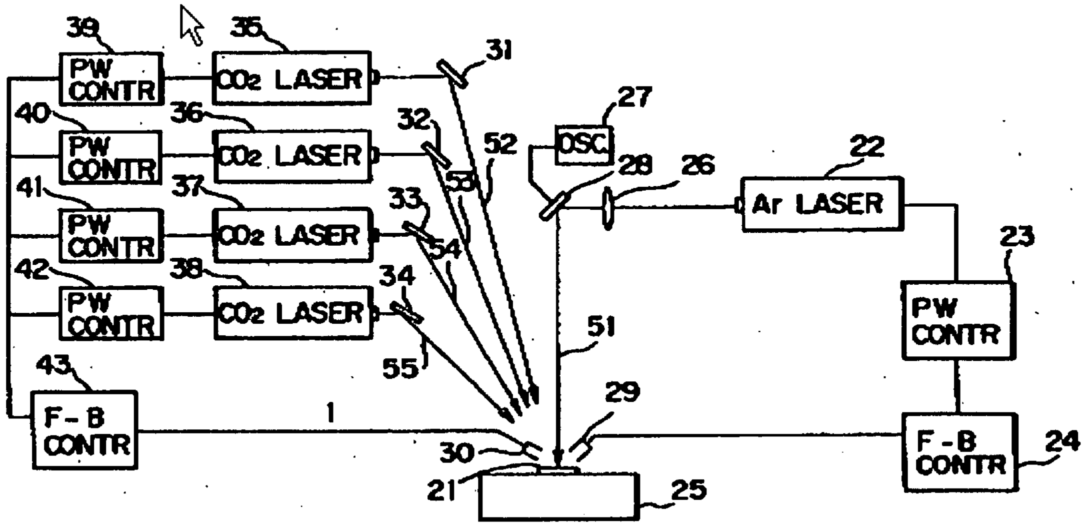
7. Claim 12, 17 and 18 are rejected under the second paragraph of 35 USC 112. Claim 12 recites the limitation "an irradiated surface" in the end of line 9. There is insufficient antecedent basis for this limitation in the claim. Claims 17 and 18 are also rejected as being dependent on the rejected claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 10, 13-14, 20 and 24-25 are rejected under 35 U.S.C. 102(b) based upon a public use or sale of the invention. Sato on 04/19/1994 taught an apparatus using a purity of laser in the crystallization process for producing a thin film semiconductor. See Figs. 1-21, where Sato teaches the following limitations.



Pertaining to claim 10, Sato teaches a method for manufacturing a semiconductor device comprising the steps of:

processing a first laser beam **52** with a wavelength of visible light or a shorter wavelength than visible light into a long beam at a surface of a semiconductor film or a vicinity thereof; and (Note Column 11, lines 33-62)

crystallizing the semiconductor film by irradiating a second laser beam **51** of a fundamental wave and the long beam at the same time to a region of the surface while moving the surface relatively with respect to the long beam in a direction. (Note Column 12, lines 13-56).

Pertaining to claim 13, as applied to claim 10 in Paragraph 9 above, Sato teaches a method for manufacturing a semiconductor device according to claim 10, wherein each of the first and second oscillators **31 and 27** has continuous wave gas laser, solid laser, or metal laser. (Note Column 8, line 42 – Column 9, line 16).

Pertaining to claim 14, as applied to claim 10 in Paragraph 9 above, Sato teaches a method for manufacturing a semiconductor device according to claim 10, wherein each of -the first and second oscillators has Ar laser, $C0_2$ laser or YAG laser. (Note Column 8, line 42 – Column 9, line 16).

Pertaining to claim 20, Sato teaches a method for manufacturing a semiconductor device comprising the steps of:

processing a first laser beam **52** with a wavelength of visible light or a shorter wavelength than visible light into a long beam at a surface of a semiconductor film or a vicinity thereof; and (Note Column 11, lines 33-62)

crystallizing the semiconductor film by irradiating a second laser beam **51** of a fundamental wave and the: long beam to a region of the surface while moving the surface relatively with respect to the long beam in a direction, (Note Column 12, lines 13-56)

wherein the long beam **52** is overlapped with the second laser beam **51** at the region. (Note Column 9, line 5-15)

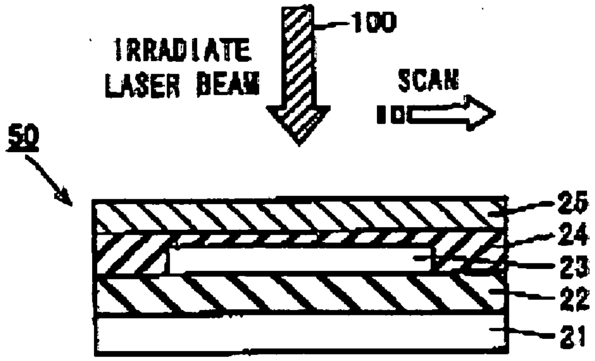
Pertaining to claim 24, as applied to claim 20 in Paragraph 9 above, Sato teaches a method for manufacturing a semiconductor device according to claim 20, wherein each of the first and second oscillators **31 and 27** has continuous wave gas laser, solid laser, or metal laser. (Note Column 8, line 42 – Column 9, line 16).

Pertaining to claim 25, as applied to claim 20 in Paragraph 8 above, Sato teaches a method for manufacturing a semiconductor device according to claim 20, wherein each of the first and second oscillators has Ar laser, CO_2 laser or YAG laser. (Note Column 8, line 42 – Column 9, line 16).

In light of the rejection 35 U.S.C. § 112 Second Paragraph that set forth herein above, the following 35 U.S.C. 102 rejection is based on prior art which reads on the interpretation the claim language of the instant application as best as understood by the Examiner.

10. Claims 12, 17 and 18 rejected under 35 U.S.C. 102(e) as anticipated by Sotani et al (US 6,897,166 B2).

Sotani teaches a purity of beams converging into one to heat a conductive layer. See FIGS. 1-14, where Sotani teaches the following limitations.



Pertaining to claim 12, Sotani teaches a method for manufacturing a semiconductor device comprising the steps of:

forming a semiconductor layer over a glass substrate **21**;

forming an insulating layer **24** for covering a top surface and side surface of the semiconductor layer **23**;

forming a conductive layer **25** over the semiconductor layer **23** with the insulating layer **24** there between;

processing a first laser beam with a wavelength of visible light or a shorter wavelength than visible light into a long; and

heating the conductive layer **25** selectively to perform heat treatment of the semiconductor layer **23** and the insulating layer **24** by irradiating a second laser beam of a fundamental wave and the long beam **100** at the same time to a region of the irradiated surface while moving the irradiated surface relatively in a direction with respect to the long beam. (Note Column 12, Line 12 - Column 13, Line 66).

Pertaining to claim 17, as applied to claim 12 in Paragraph 10 above, Sotani teaches a method for manufacturing a semiconductor device according to claim 12, wherein each of the first and second oscillators has continuous wave solid state laser. (Column 12, Lines 42 – 48).

Pertaining to claim 18, as applied to claim 12 in Paragraph 10 above, Sotani teaches a method for manufacturing a semiconductor device according to claim 12, wherein each of the first and second oscillators has YAG laser, YVO_4 laser, YLF laser or NYAB laser. (Column 12, Lines 42 – 48).

11. Claims 11,15-16, 21 and 26-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamazaki et al. (US 2003/0136772 A1).

Yamazaki teaches a laser apparatus of continuous oscillation that is capable of enhancing the efficiency of substrate processing. See FIGS. 1-38, where Yamazaki teaches the following limitations.

Pertaining to claim 11, a method for manufacturing a semiconductor device comprising the steps of:

processing a first laser beam with a wavelength of visible light or a shorter wavelength than visible light into a long beam at a surface of a semiconductor film or a vicinity thereof; and (Note Paragraphs [0061-0066]).

activating an impurity region formed in the semiconductor film by irradiating a second laser beam of a fundamental wave and the long beam at the same time to a region of the surface while moving the surface relatively with respect to the long beam in a direction. (Note Paragraph 0183).

Pertaining to claim 15, as applied to claim 11 in Paragraph 11 above, Yamazaki teaches a method for manufacturing a semiconductor device according to claim 11, wherein each of the first and second oscillators has continuous wave gas laser, solid laser, or metal laser. (Note Paragraph 0058).

Pertaining to claim 16, as applied to claim 11 in Paragraph 11 above, Yamazaki teaches a method for manufacturing a semiconductor device according to claim 11, wherein each of the first and second oscillators has Ar laser, Kr laser, CO_2 laser, YAG laser, $YV0_4$ laser, YLF laser, $YAlO_3$ laser, ruby laser, alexandrite laser, Ti:sapphire laser, helium-cadmium laser, copper vapor laser, or gold vapor laser. (Note Paragraph 0058).

Pertaining to claim 21, Yamazaki teaches a method for manufacturing a semiconductor device comprising the steps of:

processing a first laser beam with a wavelength of visible light or a shorter wavelength than visible light into a long beam at a surface of a semiconductor film or a vicinity thereof; and (Note Paragraphs [0061-0066]).

activating an impurity region formed in the semiconductor film by irradiating a second laser beam of a fundamental wave and the long beam at the same time to a region of the surface while moving the surface relatively with respect to the long beam in a direction, (Note Paragraph 0183).

wherein the long beam is overlapped with the second laser beam at the region. (Note Paragraphs 0067 and 0119).

Pertaining to claim 26, as applied to claim 21 in Paragraph 11 above, Yamazaki teaches a method for manufacturing a semiconductor device according to claim 21, wherein each of the first and second oscillators has continuous wave gas laser, solid laser, or metal laser. (Note Paragraph 0058).

Pertaining to claim 26, as applied to claim 21 in Paragraph 11 above, Yamazaki teaches a method for manufacturing a semiconductor device according to claim 21, wherein each of the first and second oscillators has Ar laser, Kr laser, CO_2 laser, YAG laser, $YV0_4$ laser, YLF laser, $YAlO_3$ laser, ruby laser, alexandrite laser, Ti:sapphire laser, helium-cadmium laser, copper vapor laser, or gold vapor laser. (Note Paragraph 0058).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yamazaki et al. US 6,423, 585 B1; Yamazaki et al. US 2004/0040938 A1; Tanaka et al. US 2004/0171237 A1; Yamazaki et al 2004/0259387 A1 and 2005/0067384 A1.

Correspondence

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip S. Green whose telephone number is (571) 272-7024. The examiner can normally be reached on Monday thru Thursday 8:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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10/12/2005

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